

From: John Knox
To: John Minns; Mohan Thadani
Date: 8/9/02 3:31PM
Subject: South Texas TACs MB4056 and MB4057

As a result of 8/1/02 telephone discussion with South Texas relating to TACs MB 4056 and MB 4057, additional question have been added to the list of proposed draft question. An additional telephone call is needed to discuss these additional question with South Texas. I will be out of the office through 8/20/02 but should be available to participate in a telephone discussion on and after 8/21/02.

CC: Amritpal Gill

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From: Mohan Thadani

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1. Provide justification for plant operation for 72 hours with one, two, or three trains having their first and second levels of loss of power instrumentation configured in a one of three channels for actuation logic. Provide the results of analysis which demonstrates that the risk increase due to spurious actuation of the loss of voltage instrumentation is within the guidelines of RG 1.174 or RG 1.177.
2. Provide justification for unrestricted plant operation with one, two, or three trains having their first and second levels of loss of power instrumentation configured in a one of three channels for actuation logic. Provide the results of analysis which demonstrates that the risk increase due to spurious actuation of the loss of voltage instrumentation is within the guidelines of RG 1.174 or RG 1.177.
3. Provide justification for plant operation for 72 hours with one, two, or three trains having their first and second levels of loss of power instrumentation configured in a two of two channels for actuation logic. Provide the results of analysis which demonstrates that the risk increase due to the potential failure of actuation of the loss of voltage instrumentation due to single failure is within the guidelines of RG 1.174 or RG 1.177.
4. Provide justification for plant operation for 72 hours with one, two, or three trains having their first and second levels of loss of power instrumentation configured in a one of two channels for actuation logic. Provide the results of analysis which demonstrates that the risk increase due to spurious actuation of the loss of voltage instrumentation is within the guidelines of RG 1.174 or RG 1.177.
5. Provide justification for unrestricted plant operation with one, two, or three trains having their first and second levels of loss of power instrumentation configured in a one of two channels for actuation logic. Provide the results of analysis which demonstrates that the risk increase due to spurious actuation of the loss of voltage instrumentation is within the guidelines of RG 1.174 or RG 1.177.
6. If an ESF load sequencer is inoperable, current TS (based on the definition for operability) requires that systems supported by the sequencer be declared inoperable. Systems supported by the sequencer include: the diesel generator standby onsite ac source, the offsite ac source, and required systems associated with (or connected to) the onsite (standby diesel generator) or offsite ac sources. These supported systems (based on the TS definition for operability) are considered inoperable.
 - a. When an offsite and diesel generator ac sources are inoperable, current TS 3.8.1.1.c allows 12 hours to restore either the offsite or onsite ac source (i.e., the ESF load sequencer). Clarify how the new proposed TS 3.8.1.1.g will interact with current TS 3.8.1.1.c and the TS definition for operability.
 - b. When one diesel generator is inoperable, current TS 3.8.1.1.b allows 14 days and TS 3.8.1.1.d allows 24 hours to verify operability of required systems. If a required system [redundant to the inoperable required systems supported by the inoperable DG or offsite circuit] is found inoperable, the system TS would apply (i.e., 3.0.3) thus requiring shutdown.
 - i. Clarify how the new proposed TS 3.8.1.1.g will interact with current TS 3.8.1.1.d and the TS definition for operability.

- ii. Explain how the current TS requirement for plant shutdown (when there is a loss of safety function conveyed by TS 3.8.1.1.d) will be maintained when there is an inoperable load sequencer.
 - c. The battery charger is a required system supported by either the offsite or onsite power source which should be considered inoperable (based on the definition for operability) when there is an inoperable ESF load sequencer. When the battery charger is inoperable, current TS 3.8.2.1.b allows 2 hours to restore the battery charger (i.e., the ESF load sequencer). Clarify how the new proposed TS 3.8.1.1.g will interact with current TS 3.8.1.1.c and the TS definition for operability.
 - d. If the dc system for one train (that is associated with the inoperable load sequencer) is assumed lost after two hours (i.e., the time for battery discharge after loss of ac power), provide the results of analysis which demonstrates that the risk increase due to loss of ac power and dc power after 2 hours is within the guidelines of RG 1.174 or RG 1.177 for the 7 day LCO time.
7. If an ESF load sequencer and a diesel generator in another division are inoperable, current TS (based on the definition for operability and TS 3.8.1.1.d) would convey inoperability of two of STP's three trains Design basis accident mitigation equipment (i.e., required systems) and require STPNOC to apply TS 3.0.3.
- a. Clarify how the new proposed TS 3.8.1.1.h will interact with current TS 3.8.1.1.d and the TS definition for operability.
 - b. Explain how the current TS requirement for plant shutdown (when there is a loss of safety function conveyed by TS 3.8.1.1.d) will be maintained when there is an apparent loss of safety function due to an inoperable load sequencer and diesel generator.
8. The bases for required action F.1 of Section 3.8.1 of WOG STS rev 2 states the following: "The sequencer(s) is an essential support system to [both the offsite circuit and the DG associated with a given ESF bus]. [Furthermore, the sequencer is on the primary success path for most major AC electrically powered safety systems powered from the associated ESF bus.] Therefore, loss of an [ESF bus sequencer] affects every major ESF system in the [division]. The [12] hour Completion Time provides a period of time to correct the problem commensurate with the importance of maintaining sequencer OPERABILITY. This time period also ensures that the probability of an accident (requiring sequencer OPERABILITY) occurring during periods when the sequencer is inoperable is minimal."
- a. The 7 day allowed outage time for components actuated by the sequencer assumes fully operable offsite and onsite power supply systems. Thus, it is not clear that the 7 day allowed outage time for components actuated by the sequencer is equivalent to the 7 day allowed outage time for an inoperable sequencer. Provide additional justification supporting the proposed 7 day (versus the STS 12 hour guideline) for an allowed outage time for an inoperable sequencer.

- b. Describe the TS LCO requirement for the condition of an inoperable sequencer and a second inoperable required system, subsystem, train, component, or device associated with the operable sequencers. For this TS LCO, provide justification for the allowed time for continued plant operation. Provide the results of analysis which demonstrates that the risk increase is within the guidelines of RG 1.174 or RG 1.177.
 - c. Describe compensatory measures (including regulatory commitment to these measures) needed to assure the increased risk is within the guidelines of RG 1.174 or RG 1.177.
9. Required action B.2 of Section 3.8.1 of WOG STS rev 2 is intended to provide assurance that a loss of offsite power, during the period that a DG is inoperable, does not result in a complete loss of safety function of critical systems.
- a. The 24 hour TS LCO for an inoperable diesel generator with another component that depends on one of the operable diesels that is also inoperable assumes a fully operable offsite power system. Thus, it is not clear that this 24 hour TS LCO for an inoperable diesel generator with another component inoperable is consistent or comparable to the proposed new 24 hour required action h (i.e., one inoperable load sequencer and one inoperable DG in another train). With an inoperable sequencer, the offsite power system is not fully operable. With an inoperable diesel generator the offsite power system is, however, required by TS to be fully operable. For the proposed 24 hour TS LCO, provide additional justification for the allowed time for continued plant operation. Provide the results of analysis which demonstrates that the risk increase is within the guidelines of RG 1.174 or RG 1.177.
 - b. Describe the TS LCO requirements for the condition of an inoperable sequencer, an inoperable DG in another train, and an inoperable required system, subsystem, train, component, or device associated with:
 - i. the operable sequencers,
 - ii. The inoperable sequencer,
 - iii. The inoperable DG, and
 - iv. The operable DG.For each of these TS LCOs, provide justification for the allowed time for continued plant operation. Provide the results of analysis which demonstrates that the risk increase is within the guidelines of RG 1.174 or RG 1.177.
 - c. Describe compensatory measures (including regulatory commitment to these measures) needed to assure the increased risk is within the guidelines of RG 1.174 or RG 1.177.